Fear and anxiety as predictors of political attitudes: A prospective cohort study

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Tiivistelmä/Referat – Abstract

Tavoitteet. Tämän tutkimuksen tavoitteena oli selventää pelon ja ahdistuksen yhteyttä poliittisiin asenteisiin. On ehdotettu, että yksilölliset erot poliittisessa ideologiassa kumpuavat eroista uhkaherkkyydessä ja että konservatiivinen poliittinen ideologia toimii puolustuskeinona psykologisia uhkia vastaan. Aiemmissa tutkimuksissa on saatu kuitenkin viitteitä siitä, että uhkareaktioista nimenomaan pelko, ei ahdistus, vaikuttaisi poliittisten asenteiden taustalla. On myös epäselvää, liittyykö uhka poliittiseen ideologiaan laajemmin, vai vain asenteisiin tietyissä poliittisissa kysymyksissä. Tässä tutkimuksessa tarkastelen ennustavatko ahdistushäiriöoireet, jotka heijastelevat eroja pelokkuudessa ja ahdistuneisuudessa, erilaisia poliittisia asenteita.

Menetelmät. Tutkimuksen otos koostui 5819 vuonna 1958 syntyneestä isobritannialaisesta. Yleistyneen ahdistushäiriön, fobioiden ja paniikkihäiriön oireita arvioitiin 44-vuoden iässä ja mielipiteitä poliittisissa kysymyksissä kuusi vuotta myöhemmin. Poliittisten mielipiteiden jakautumista eri asennedimensioihin tarkasteltiin ensin eksploratiivisen faktorianalyysin avulla ja tätä kautta muodostettiin seitsemän laajempaa poliittista asennetta. Lopulta muodostettiin polkumalli, jonka avulla tarkasteltiin ennustavatko ahdistushäiriöoireet poliittisia asenteita.

Tulokset ja johtopäätökset. Ahdistushäiriöoireet ennustivat asenteita taloudellista epätasa-arvoa ja ympäristön suojelua kohtaan. Tarkemmin, he joilla oli enemmän yleistyneen ahdistushäiriön oirehdintaa, olivat huolestuneempia ympäristöstä ja he joilla oli enemmän foobisia oireita, olivat huolestuneempia taloudellisesta epätasa-arvosta. Ero yleistyneen ahdistushäiriön ja fobioiden välillä saattaa selittyä sillä, että ensimmäinen liittyy enemmän ahdistuneisuuteen, kun taas jälkimmäinen heijastelee pelokkuutta. Tulokset tukevat näkemystä pelon ja ahdistuksen erilaisista yhteyksistä poliittisiin asenteisiin, ja asettavat kyseenalaiseksi sen, että uhkareaktiot liittyisivät laajemmin poliittiseen ideologiaan, kuten usein on väitetty.

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Objective. The aim of this study was to clarify the relationship between fear and anxiety, and political attitudes. It has been suggested that individual differences in political ideology stem from differences in threat sensitivity and that conservative political ideology acts as a defence mechanism against psychological threats. There is tentative evidence from previous studies that from different threat reactions fear specifically but not anxiety influences political attitudes. It is also unclear whether threat is connected to political ideology more broadly or just attitudes concerning some political matters. In this study I assess whether anxiety disorder symptoms that reflect differences is fearfulness and anxiety predict different political attitudes.

Methods. The sample of this study consisted of 5,819 people born in Great Britain in 1958. Symptoms of generalized anxiety disorder, phobia, and panic were assessed at the age of 44, and opinions about political issues six years later. Exploratory factor analysis was used to assess how political opinions were structured into different attitude dimensions, and seven broader political attitudes were formed based on this. Finally, a path model was used to assess whether anxiety disorder symptoms predicted political attitudes.

Results and discussion. The anxiety disorder symptoms predicted attitudes towards economic inequality and preservation of the environment. More specifically, those with more generalized anxiety disorder symptoms were more concerned about environmental issues and those with more phobic symptoms were more concerned about economic inequality. This difference between generalized anxiety disorder and phobias might be explained by the fact that the former is connected with anxiousness whereas the latter reflects fearfulness. The results support the notion that fear and anxiety are differently connected to political attitudes. They also call into question threat reactions' connection with political ideology more broadly.

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1. Introduction

What makes some people endorse stricter views on immigration or abortion while others rally for same-sex marriage and preserving the environment? The underpinnings of political ideology and attitudes continue to interest researchers as well as lay people. Some theories suggest that the differences in political ideology and attitudes reflect underlying differences in threat sensitivity (Adorno, Frenkel-Brunswik, Levinson, & Sanford, 1950; Duckitt, 2001) and they might be adopted in order to defend oneself from psychological threats (Jost, Glaser, Kruglanski, & Sulloway, 2003).

Perhaps the most influential and pervasive take on this is that of Jost et al. (2007; Jost, Glaser, Kruglanski, & Sulloway, 2003). Drawing from a wide range of previous theories and empirical findings, Jost et al. (2003) suggest that conservative political ideology is a form of motivated social cognition and serves the function of fulfilling the needs for security and certainty. According to this view, conservatives are more sensitive to threatening and ambiguous stimuli compared to liberals, in other words more fearful and anxious, which makes conservative political views more appealing to them.

Even though often conflated in the literature of political psychology, fear and anxiety are distinct reactions to different kinds of threat. There is at least tentative evidence that it might not be threat sensitivity in general, but trait fearfulness specifically that plays an important part in shaping political attitudes (Huddy, Feldman, Taber, & Lahav, 2005; Ray & Najman, 1987). In addition, evidence of the relationship between feelings of threat and distinct attitudes supports the notion that threat sensitivity is an underlying factor in attitudes concerning out-groups (Golec de Zavala, Cisłak, & Wesołowska, 2010; Verkuyten, 2009). However, the link to attitudes about other political issues is less evident (Nail & McGregor, 2009).

This study aims to further clarify the relationship between sensitivity to threat and political ideology by examining the effect fear and anxiety dispositions have on political attitudes across different domains of issues. Previous studies with self-reported measures and experimental study designs have showed feelings of threat to be connected to conservative political ideology (Jost et al., 2003; Jost, Stern, Rule, & Sterling, 2017; Onraet, Van Hiel, Dhont, & Pattyn, 2013). However, they have mostly overlooked

the difference between fear and anxiety. Many studies have also measured political ideology as a one-dimensional liberal-conservative continuum, even though this simplification does not capture different political positions well enough (Carmines, Ensley, & Wagner, 2012; Evans, Heath, & Lalljee, 1996; Feldman & Johnston, 2014; Saucier, 2000; Treier & Hillygus, 2009). The current study explores whether clinical measures of fear and anxiety predict societal and political attitudes more broadly, offering a more nuanced look into the relationship between feelings of threat and political orientation.

1.1. Political attitudes and political ideology

Attitudes can be defined as evaluations or judgements about entities, such as people, events or phenomena, that influence and are influenced by beliefs, emotions, and behaviours (Albarracin, Zanna, Johnson, & Kumkale, 2005). Political attitudes, more specifically, are views about how the society should be organized and which laws or cultural norms should prevail. They are evaluations about the current societal situation and how, if at all, it should be changed. People have different policy preferences on e.g. taxation, rights of minorities, gun ownership, and private business. It seems that people do not only hold opinions on specific political matters, but that there are also more general principles behind these attitudes that guide how people judge political issues and form policy preferences. People show constraint in their political attitudes so that some attitudes are more likely to go together than others (Achen, 1975; Ansolabehere, Rodden, & Snyder, 2008; Carmines & D'Amico, 2015; Feldman, 1988; Goren, 2004; Peffley & Hurwitz, 1985). These broader political views and coherent collections of attitudes are often conceptualized as political ideology.

Although there has been much debate over what actually constitutes political ideology for many decades, no clear consensus has emerged on the exact nature and structure of it. In psychological research, political ideology has often been equated with liberal-conservative self-identification (or left-right self-identification). The liberal or left side is associated with such things as equal opportunity, more just distribution of wealth, and the rights of minorities while the conservative or right side is associated with free enterprise, capitalism, authoritarianism, and traditional values. However, research has shown that measuring ideology solely in terms of one-dimensional liberal-conservative continuum does not capture the scope of peoples' political beliefs in enough detail (Carmines et al., 2012; Evans et al., 1996; Saucier, 2000; Treier & Hillygus, 2009). Feldman and Johnston (2014) illustrated several

problems with this one-dimensional approach to political ideology. In their study on political ideology in the US, only 40 % of the participants would fit neatly in either conservative or liberal category based on their political views. This means that the majority of Americans have a pattern of political views that do not fit the standard description of liberals and conservatives. In the same study, the self-identified liberals and conservatives had varying political views: especially conservatives were quite heterogeneous in their attitudes. Moreover, self-identified moderates included not only those with actually moderate political views, but also people who held views traditionally considered liberal in some domains and views traditionally considered conservative in other domains. The study by Feldman and Johnston (2014) indicates that the one-dimensional view of political ideology is problematic even in the US where a clear-cut divide into two categories, liberal and conservative, is supported by the division of the political field into two major parties. The problem might be even bigger in countries where the political field is more diverse.

It seems that political ideology is best conceptualized and measured as multidimensional, rather than one-dimensional. There is no clear consensus on how many dimensions are needed to capture the variation in political ideology or what these dimensions are, but perhaps the most common approach is to divide political ideology into two dimension. These two dimensions are often labelled as economic and social (e.g. Carmines et al., 2012; Feldman & Johnston, 2014; Treier & Hillygus, 2009). Other definitions exist too, for example right-wing authoritarianism and social dominance orientation (Duckitt, 2001) or left-right and libertarian-authoritarian (Evans et al., 1996), but these often bear a close resemblance to the economic and social dimensions. A two-dimensional model of political ideology seems to explain variation in political attitudes better than a one-dimensional model (Feldman & Johnston, 2014; Treier & Hillygus, 2009). Furthermore, a two-dimensional approach allows us to distinguish better between different political profiles. For example, Feldman and Johnston (2014) identified 6 categories with distinct ideological profiles, instead of the traditional categorization into liberals, moderates, and conservatives.

1.2. Responses to threat: fear and anxiety

Fear and anxiety are emotions that arise in response to threat and serve the function of preserving life in threatening situations (Lang, Davis, & Öhman, 2000). Although these are evolutionarily adaptive

reactions shared by all humans, there are also individual differences in how easily fear and anxiety are induced and how strong these reactions are. Fear and anxiety can be therefore seen not only as emotional states, but also as traits – dispositions that reflect how easily threat response arises and how individuals react to different threats (Sylvers, Lilienfeld, & LaPrairie, 2011).

At their extremes these fear and anxiety traits can manifest as mental disorders. Current diagnostic nosology describes disorders that are characterized by excessive fear and anxiety under the umbrella term *anxiety disorders*. The 5th edition of Diagnostic and statistical manual of mental disorders (American Psychiatric Association, 2013) includes in this category disorders such as generalized anxiety disorder (GAD), panic disorder, specific phobia, and social anxiety. These disorders manifest as excessive fear and worry either in relation to specific situations or in a more free-floating manner, as well as somatic symptoms such as increased physiological arousal, muscle tension, fatigue, and sleep disturbances.

There is evidence that, though often conflated in psychological literature, fear and anxiety are distinct emotions that operate through different neural pathways and have different defining characteristics. In their comprehensive review, Sylvers et al. (2011) differentiate between state fear and anxiety, as well as trait fear and anxiety. Based on findings in neurobiological studies, it seems that fear and anxiety are both emotions characterized by negative valence that arise in reaction to threat. However, fear seems to occur when the threat is imminent or clear and the response dissipates quickly, whereas anxiety is a sustained response to uncertain or ambiguous threat. Trait fear might be the result of an underactive extinction circuit that leads to persistent avoidance response even when there is no objective danger (as is the case with phobias). Trait anxiety on the other hand seems to result from a hypersensitive appraisal circuit which leads to overestimating the potential threat in ambiguous situations leading to apprehension, hypervigilance and rumination (which are hallmarks of GAD).

It might be that in the broad category of anxiety disorders some disorders, such as panic disorder and specific phobias, reflect trait fearfulness and others, such as GAD, reflect trait anxiety. Studies on the structure of mental disorders have found that the comorbidities of internalizing disorders (i.e. mood and anxiety disorders) can be explained by two sub-dimension: distress (sometimes also called anxious-misery) and fear (Eaton, Krueger, Keyes, Wall, & Grant, 2013; Krueger, 1999; Slade & Watson, 2006;

Vollebergh et al., 2001). Phobias and panic disorder are, by and large, thought to be expressions of the fear sub-dimension, whereas GAD shares more variance with mood disorders, such as major depressive disorder and dysthymia, and might thus be better explained by the distress sub-dimension. Further support for this comes from studies on genetic background of common mental disorders as well as differences in fear potentiated startle reflexes. GAD and phobias seem to differ in their underlying genetic factors, with GAD sharing more genetic variance with other disorders assumed to be more closely related to the distress sub-dimension (Hettema, Prescott, Myers, Neale, & Kendler, 2005; Kendler, Prescott, Myers, & Neale, 2003). Phobias and GAD also differ in terms of fear potentiated startle reflexes, indicating that they might reflect differences in fear reactions (Gorka, Lieberman, Shankman, & Phan, 2017; Vaidyanathan, Patrick, & Cuthbert, 2009). However, in contrast to studies examining the comorbidity of the disorders, genetic and fear potentiated startle studies indicate that panic disorder might be more closely related to distress, rather than to the fear sub-dimension.

1.3. Linking fear and anxiety to political attitudes

Linking threat, fear, and anxiety to political attitudes is in no way a novel approach. Many theories on the individual differences in political attitudes and political ideology have included threat sensitivity as an underlying factor in one way or another. These theories mostly talk broadly about threat and threat sensitivity and often seem to lump fear together with anxiety. Although the role fear in shaping political orientation is more often addressed explicitly, quite often theories also mention anxiety as a contributing factor, without further addressing the difference between these two emotions.

Right-wing Authoritarianism

Perhaps the most influential take on explaining political ideology is the theory of the authoritarian personality (Adorno et al., 1950; Altemeyer, 2006). Following World War II, the theory of the authoritarian personality sought to explain why people adopt different ideologies, and especially the rise of fascism. The authoritarian personality, first suggested by Adorno et al. (1950) and further developed by Altemeyer (2006) into right-wing authoritarianism, is defined as a personality trait characterized by obedience to authority, prejudice towards out-groups and conventionalism. Authoritarian personality and right-wing authoritarianism have been suggested to be a result of punitive parenting style that leads to fear and aggressiveness and motivates one to seek predictability and

control in life (Adorno et al., 1950). It has been pointed out that the definition and measurements of right-wing authoritarianism reflect political attitudes rather than distinct and underlying personality trait (Duckitt, 2001; Jost et al., 2003; Wilson, 1973) and it has been treated as such in many studies.

Even though right-wing authoritarianism has often been used as a proxy for conservatism, this approach is not without problems. As such, the measures of right-wing authoritarianism confuse political orientation or attitudes with authoritarianism and measure something of a compound of the two. While it measures both, it is a rather poor measure of either alone. It is hard to disentangle whether the several correlates of right-wing authoritarianism relate to the measured political opinions or authoritarian attitudes, or the unique combination of the two. Examining right-wing authoritarianism alone does not tell us much about the assumed imbalance of authoritarian attitudes across the political spectrum: some conservatives are no doubt very authoritarian, but it would seem that so are some liberals (Conway, Houck, Gornick, & Repke, 2017). So perhaps rather than thinking about right-wing authoritarianism as synonymous to conservativism, as many studies have used it, it might be best thought as a *type* of conservatism (Crowson, Thoma, & Hestevold, 2005).

The Dual Process Model of Political Ideology

More recently conservative political ideology has been linked to fearful worldviews. The dual-process model of political ideology (Duckitt, 2001) combines the aforementioned right-wing authoritarianism and related but distinct social dominance orientation (Pratto, Sidanius, Stallworth, & Malle, 1994) as the two dimensions of political ideology. According to this view, individual differences in political ideology are the result of different worldviews stemming from socialization and personality differences. Right-wing authoritarianism is related to a view of the world as threatening and dangerous place whereas social dominance orientation relates to a view that the world is competitive by nature (Perry, Sibley, & Duckitt, 2013).

Studies have found that threat is connected to right-wing authoritarianism and social dominance orientation, as well as the aforementioned worldviews. Historical evidence shows that in years of economic hardship in the US between 1920 and 1970, people converted to authoritarian churches more frequently compared to years when the economic situation was good (Sales, 1972). Perceived threat has also been found to be connected to higher levels of right-wing authoritarianism and social dominance

orientation (Bonanno & Jost, 2006; Canetti, Halperin, Hobfoll, Shapira, & Hirsch-Hoefler, 2009; Charles-Toussaint & Crowson, 2010; Craig & Richeson, 2014; Feldman, 2003; Hodson, Hogg, & MacInnis, 2009; McFarland, 2005; Nilsson & Jost, 2017; Onraet & Van Hiel, 2013). Experimental studies too have linked threat to right-wing authoritarianism and social dominance orientation. For example, reminders of terrorist threat appear to increase right-wing authoritarianism (Asbrock & Fritsche, 2013) and reading a threat inducing story has been found to increase the belief that the world is a dangerous place, as well as right-wing authoritarianism and social dominance orientation (Akrami, Ekehammar, Bergh, Dahlstrand, & Malmsten, 2009; Duckitt & Fisher, 2003; Jugert & Duckitt, 2009). Moreover, individuals high in right-wing authoritarianism have been found to be more susceptible to messages that use threat, rather than reward, for persuasion (Lavine et al., 1999). However, there is at least tentative evidence that it might be external threat, i.e. threat to the society, specifically that increases right-wing authoritarianism and social dominance orientation, and that internal threat, i.e. threat that has no societal relevance, actually decreases right-wing authoritarianism (Onraet et al., 2013).

Political conservatism as motivated social cognition

One of the most prominent theories at the moment on threat and political orientation is that of Jost et al. (2007, 2003). Building on previous theoretical approaches to political ideology as well as empirical evidence, Jost and colleagues pose the idea that conservative ideology is an example of motivated social cognition and stems from the needs to manage uncertainty and fear. The theory differentiates between the core and peripheral features of conservatism. The core features are, according to the theory, attitudes towards change and equality which serve as a coping mechanism for managing uncertainty and fear. The peripheral features on the other hand are the more changeable political attitudes, such as opinions about gun control or abortion, that are influenced by both the core features and the current social and political situation. In other words, conservatives have stronger needs to manage uncertainty and threat than liberals, which leads them to be reluctant to embrace change and ready to accept inequality, which in turn makes conservative attitudes and policies more appealing to them.

The view of conservatism as motivated social cognition has been examined in many studies. Jost et al. (2003, 2017) have compiled two meta-analytic reviews going through the evidence supporting this

theory, the more recent one (Jost et al., 2017) focusing specifically on the effects of threat. Based on these meta-analyses, it would indeed seem that threat does predict increased conservatism. However, another meta-analysis (Onraet et al., 2013) came to the conclusion that the effect is stronger with external than internal threat. It has to be noted that the studies included in these meta-analyses measured political conservatism in a variety of ways. For example, nearly all of the studies included in the first meta-analysis (Jost et al., 2003), and a large part of the studies in the latest meta-analysis (Jost et al., 2017) measured political conservatism as right-wing authoritarianism or social dominance orientation. Do the conclusions of these meta-analyses then hold true for political ideology more generally? Even when excluding studies that have used constructs from the dual-process model of political ideology to measure threat and political orientation, there is some evidence to support the view that threat is related to political views. Studies have examined the effects of real-life events, self-reported threat as well as physiological differences on many political outcomes, such as self-reported ideology, political attitudes, and voting preferences.

Threat has been found to predict support for more conservative or right-wing parties and political candidates. For example, during threatening periods of time, the number of conservative candidates elected increased in the US (McCann, 1997). A number of studies also indicate that inducing thoughts of death increased support for president Bush in the years following the 9/11 attacks (e.g. Gailliot, Schmeichel, & Baumeister, 2006; Landau et al., 2004; Ogilvie, Cohen, & Solomon, 2008; Weise et al., 2008). However, there is some evidence that threat can increase support for left-wing parties too. A study conducted in Israel found that the number of local terror-related fatalities increased support for right-wing parties, but the total number of fatalities (i.e. country-wide amount of fatalities) increased support for left-wing parties in left-leaning areas (Berrebi & Klor, 2008).

In addition to party affiliation and voting preferences, threat seems to be related to political attitudes as well. A study looking into the change in political attitudes of those who were in close proximity to the 9/11 terrorist attacks found that 38 % estimated a conservative shift in their political attitudes, while 49 % reported that their attitudes had not changed following the attacks (Bonanno & Jost, 2006). After the Madrid terrorist attacks there was a decrease in liberal values in Spain (Echebarria-Echabe & Fernández-Guede, 2006) and along the same lines, terrorist attacks in London seem to have increased negative attitudes towards immigrants and Muslims in liberals but not in conservatives (Van de Vyver,

Houston, Abrams, & Vasiljevic, 2016). In Israel, exposure to political violence predicted less support for compromise and higher levels of exclusionist attitudes (Canetti-Nisim, Halperin, Sharvit, & Hobfoll, 2009; Canetti, Elad-Strenger, Lavi, Guy, & Bar-Tal, 2017). In addition to threatening events, perceived threat has also been linked to more conservative political attitudes, such as opposition to affirmative action and less support for multiculturalism and equal rights (Renfro, Duran, Stephan, & Clason, 2006; Thórisdóttir & Jost, 2011; Verkuyten, 2009). Perceived threat of terrorist attacks specifically have been found to predict support for military action, support for president Bush, stereotyping, hostility towards Muslims, and support for restriction of civil liberties (Davis & Silver, 2004; Golec de Zavala et al., 2010; Huddy et al., 2005).

These findings support the notion that threatening events and perceived threat contribute to political attitudes and ideology, as well as political behaviour. However, in many of these studies threat has been explicitly related to political issues, such as the threat of terrorism. This still leaves open the question of to what extent does threat sensitivity play a role in differences in political orientation. People might oppose immigration because they see immigrants as a threat, but is this because these people are more susceptible to threat in general, as the underlying theories seem to suggest?

Some studies have also examined how political attitudes and ideology are connected to differences in dispositional fearfulness and anxiety. Fearful, anxious and rigid personality in early childhood has been linked to conservative political ideology later in life (Block & Block, 2006; Fraley, Griffin, Belsky, & Roisman, 2012). Political attitudes also seem to correlate with stronger physiological reactions to threatening or aversive stimuli. Those who have more conservative attitudes on issues concerning protecting the social structure (e.g. military spending, capital punishment, or patriotism) have increased skin conductance when viewing threatening images compared to those with more liberal opinions (Dodd et al., 2012; Oxley et al., 2008). Differences in political ideology also seem to be connected to a bias towards threatening or negative stimuli. Republicans are more likely to interpret ambiguous faces to express threatening emotions than Democrats (Vigil, 2010) and conservatives direct their attention to negative stimuli quicker than liberals (Carraro, Castelli, & Macchiella, 2011). There is also at least tentative evidence that fearful disposition might share genetic variance with political attitudes and ideology. Hatemi, McDermott, Eaves, Kendler, and Neale (2013) found that lifetime social phobia, reflecting trait fearfulness, was related to an increase in out-group attitudes. They also

looked into the relationship between recently experienced phobic fear and overall conservatism-liberalism: recent phobic fear was related to more conservative overall political ideology, but to a lesser extent than social phobia was with out-group attitudes. Both of these effects were largely accounted for by genetic influences. Although the discrepancy between threat sensitivity's relationship with overall political ideology and out-group attitudes in the study by Hatemi et al. (2013) might be due to the measures used (i.e. overall political ideology was only examined in relation to recently experienced phobic fear, which might not capture fear disposition well enough and thus might weaken the observed relationship), the results do raise interesting questions. It is possible that fearfulness or threat sensitivity more generally is more closely related to out-group attitudes than to ideology more broadly.

In many, if not most of the cases where threat has been found to be linked to specific attitudes, these attitudes have been related to out-groups: for example, support for multiculturalism and equality, or attitudes towards military and immigrants can all be thought to reflect attitudes towards dissimilar groups. When the measured attitudes' connection to out-groups is less clear, i.e. support for president Bush or restriction of civil liberties, the threats that have been found to predict these attitudes have also been explicitly connected to terrorism. This in itself might make these attitudes be perceived in terms of protection from out-groups. One study found that both liberals and conservatives were more positive towards military spending and president Bush following the 9/11 attacks, but did not find an effect on other political attitudes, such as attitudes towards feminism or socialized medicine (Nail & McGregor, 2009). Even though it seems that there is quite compelling evidence that threat makes people more conservative, it might be that this effect is due to threat affecting only some specific attitudes, for example those concerning out-groups, which is then reflected in harsher policy preferences concerning for example immigration or military spending.

Another often overlooked aspect is the possible difference between different kinds of threats and threat reactions, in other words, the difference between fear and anxiety. Most of the studies on political attitudes and threat have focused on fear or threats that can be assumed to cause fearful reactions, i.e. clear-cut and well-defined threats such as terrorism. A few studies have provided tentative evidence that it is fear, not anxiety, that predicts more conservative attitudes. In one study, even though threat of terrorist attack predicted increased support for military action and president Bush, anxiety over the attack predicted less support for these (Huddy et al., 2005). It might also be that there is no connection

between anxiety and conservatism (Ray & Najman, 1987). However, more evidence is needed before it can be concluded that anxiety does not relate to political attitudes or ideology.

1.4. The present study

Several theories suggest that underlying sensitivity to threat and tendency to experience fear and anxiety influence a broader range of political attitudes reflected in differences in political ideology. However, the exact relationship between threat sensitivity and political attitudes remains to be tested. To summarize the findings of previous literature, threat has been found to be related to more conservative political ideology and attitudes, but it might be that this effect is limited to threat influencing attitudes relating to out-groups. Although most studies have focused on the effects of state fear or anxiety, it might be that the individual differences in political attitudes and ideology are due to dispositional threat sensitivity. There is also tentative evidence that it is fearfulness, but not proneness to anxiety or threat sensitivity more generally, that underlies political attitudes.

The most central questions yet to be answered are therefore whether the relationship between threat sensitivity and political attitudes is limited to fearfulness, and whether this relationship is similar across different domains of political issues. This study aims to provide some answers to these questions by examining how trait fear and anxiety predict political attitudes in several domains. If political attitudes are influenced by individual differences in tendency to experience threat, it can be assumed that these differences would be reflected in differences regarding anxiety disorders, which can be though to indicate extreme tendencies to react to threat with fear or anxiety. At least one previous study has successfully examined anxiety disorders', more specifically social phobia's, connection to political ideology (Hatemi et al., 2013). Moreover, examining the possible differences between different anxiety disorders provides a way of assessing the difference between fear and anxiety, as different disorders under the umbrella term seem to reflect trait fear and trait anxiety differently.

As political attitudes are a complex social phenomenon, they are influenced by many factors that need to be taken into account when assessing how fear and anxiety influence them. Some of the most well established correlations are found for sex, level of education, and personality. These are also connected to anxiety disorders and mental health in more general. Women tend to be more at risk for anxiety

disorders (e.g. Baxter, Scott, Vos, & Whiteford, 2013; Haller, Cramer, Lauche, Gass, & Dobos, 2014; Remes, Brayne, van der Linde, & Lafortune, 2016; Steel et al., 2014). They also seem to be generally more liberal (Giger, 2009; Inglehart & Norris, 2000), although some studies have found women to be more liberal on issues concerning welfare but more conservative about abortion, gender roles, and sexuality than men are (Clark, 2017; Eagly, Diekman, Johannesen-Schmidt, & Koenig, 2004). Higher levels of education predict more socially liberal views (Schoon, Cheng, Gale, Batty, & Deary, 2010; Stubager, 2013), but some studies have found it also to be associated with economically conservative views (Heath, Evans, & Martin, 1994). Lower levels of education on the other hand are a risk factor for poorer mental health in general, including anxiety disorders (Bjelland et al., 2008; Chazelle et al., 2011; Michael, Zetsche, & Margraf, 2007). The personality traits most commonly associated with common mental disorders are neuroticism and conscientiousness, and with political ideology or attitudes openness to experience and conscientiousness. Higher neuroticism is a strong predictor of more mental health issues while high conscientiousness predicts less problems (Clark, Watson, & Mineka, 1994; Kotov, Gamez, Schmidt, & Watson, 2010; Malouff, Thorsteinsson, & Schutte, 2005). Conscientiousness is also associated with more conservative views, while openness to experience consistently predicts more liberal views (e.g. Carney, Jost, Gosling, & Potter, 2008; Duckitt & Sibley, 2016; Fatke, 2017; Sibley, Osborne, & Duckitt, 2012). The relationships with agreeableness, extraversion, and neuroticism are less clear: some subdimensions of agreeableness might predict conservatism and others liberalism (Hirsh, De Young, Xu, & Peterson, 2010), while extraversion (Fatke, 2017; Sibley et al., 2012) and neuroticism (e.g. Caprara, Schwartz, Capanna, Vecchione, & Barbaranelli, 2006; Fatke, 2017; Verhulst, Eaves, & Hatemi, 2016, 2012) have yielded inconsistent correlations in different studies. Because these factors are associated with both, political orientation and anxiety disorders, they might confound the association between these two and it is therefore important to take them into account when trying to unravel the relationship between anxiety disorders and political attitudes.

This study aims to shed more light on the relationship between different political attitudes and sensitivity to threat by providing answers to two central questions. First, whether or not attitudes on different political issues are connected to fear and anxiety. And second, whether or not different kinds of fear and anxiety dispositions are related to political attitudes. I do this by examining how three anxiety disorders, GAD, panic, and phobia more specifically, predict political attitudes in variety of

domains while controlling for the effects of some of the most important confounding factors, i.e. sex, level of education, and personality.

2. Methods

2.1. Sample

The data used in this study is from National Child Development Study (NCDS; Power & Elliott, 2006), which is an ongoing longitudinal study by the Centre for Longitudinal Studies. NCDS follows 18,558 participants from Great Britain who were born in one particular week in 1958 covering a multitude of aspects of life, such as health, education, home environment, and economic situation. After the first survey, there have since been eight follow-up surveys at the ages of 7, 11, 16, 23, 33, 42, 46, and 50. An additional biomedical survey was also conducted for 12,069 of the cohort members in 2002-2003 at the age of 44, covering biomedical risk factors and current health condition, including mental health. The present study utilizes data from the last follow-up survey conducted in 2008-2009 at the age of 50, as well as the biomedical survey conducted in 2002-2003 at the age 44 (University of London, Institute of Education, Centre for Longitudinal Studies, 2009; 2012).

The sample of this study comprises of those cohort members who were selected for the additional biomedical survey. The selection was done based on the response to previous three follow-up surveys in 1981-2000 leaving 12,069 participants out of the original 18,558 cohort members. 9,377 participants answered in the biomedical survey. Compared to the surviving cohort, those with behavioural problems in childhood, lower childhood social class, and lower cognitive ability in childhood are somewhat underrepresented in the participants of biomedical survey (Atherton, Fuller, Shepherd, Strachan, & Power, 2008).

1,182 of those who answered in the biomedical survey had not taken part in the 8th follow-up survey, and were therefore excluded from the analyses. Further 2,376 had not answered some of the relevant mental health questions in the biomedical survey or political attitude or personality questions in the 8th follow-up survey and were therefore excluded, leaving the final sample to be 5,819. Further details of

the selection of the sample are presented in Figure 1. Descriptive statistics for the final sample are presented in Table 1 and correlations between the variables in Table 2.

2.2. Measures

GAD, phobia and panic

GAD, phobia, and panic disorder symptoms were assessed at the age of 42 using the Revised Clinical Interview Schedule (CIS-R; Lewis, Pelosi, Araya, & Dunn, 1992). CIS-R is a widely used standardized interview for assessing common psychiatric disorders. Each symptom category was assessed with 4 questions about the experienced symptoms in the past week (e.g. "On how many of the past seven days have you felt generally anxious/nervous/tense?"). A score ranging from 0 to 4 was calculated separately for GAD, phobia, and panic symptoms separately, based on the participants' answers about the symptoms' severity and frequency, with higher scores indicating more severe and frequent symptoms. 2 or more points per symptom category can be considered to indicate significant symptoms (Lewis et al., 1992). A mean score consisting of GAD, phobia, and panic symptoms was also calculated to assess overall anxiety disorder symptoms.

Political attitudes

Political attitudes at the age of 50 were assessed with 21 statements that covered attitudes toward environmental issues, severity of punishments, and marriage among others (e.g. "Schools should teach children to obey authority"). Participants indicated to what extent they agreed with the statements on a scale from 1 (strongly agree) to 5 (strongly disagree). For the purposes of this study, items were reverse coded for more intuitive interpretation, with higher values indicating higher agreement. These items have been previously used to measure political or social attitudes, but the previous studies have often included some, but not all of the items used here, or included additional items not used in the present study (e.g. Evans et al., 1996; Paterson, 2013; Schoon et al., 2010).

Level of education

Participants' level of education was categorized based on information obtained in the previous follow-up surveys as following: none (0), bad O levels or CSE 2-5 (1), Good O-levels or 1 A-level (2), 2 or more A-levels (3), sub-degree (4), degree (5), and higher degree (6).

Personality

Personality was assessed at the age 50 with 50 questions from the International Personality Item Pool (IPIP; Goldberg, 1999), which reflect the Big 5 traits extraversion, agreeableness, conscientiousness, agreeableness, and intellect (openness). IPIP consists of 10 statements for each trait (e.g. "I am the life of the party."). Participants indicated to what extent they agree with statements on a scale from 1 (strongly agree) to 5 (strongly disagree). A summary score for each trait was calculated ranging from 10-50, with higher scores indicating higher levels of each trait.

2.3. Statistical analyses

Attrition was examined using logistic regression to see if sex, GAD, phobia, and panic predict non-participation in the 8th follow-up survey. A dummy variable indicating non-response was formed and the predictors were regressed on it. First, separate regression analyses were conducted for each predictor. In order to control the effects of other predictor variables, a regression analysis containing all the predictor variables was also conducted.

In order to establish a possible underlying structure of the political attitude variables, exploratory factor analysis was performed on the attitude variables. Even though the structure of these attitude items has been examined previously (e.g. Cheng, Bynner, Wiggins, & Schoon, 2012) these studies have neither included all of the present items nor been limited to these, and it is therefore justified to examine the structure here as well. Because political attitudes can be assumed to be correlated, oblique rotation was used. The obtained factors were used to calculate mean scores for different domains of attitudes which were then used in further analyses.

The relationship between anxiety, phobia, panic, and political attitudes were then examined with path analyses. First, in order to examine whether these symptoms in general are associated with political attitudes the mean score for the three anxiety variables was used to predict different political attitude factors obtained before. Then, in order to examine the unique relationships between anxiety, phobia, and panic and the political attitude factors, a second model was used where each disorder symptoms were examined separately. These two models are presented in Figures 2 and 3. The models were also adjusted for sex, level of education, and personality. Model fit can be evaluated based on the

comparative fit index (CFI) and the root mean square error approximation (RMSEA) index. The CFI values above 0.90 and the RMSEA values below 0.08 indicate adequate fit, while the CFI values above 0.95 and the RMSEA values below 0.05 indicate good fit.

All analyses were conducted using R version 3.4.1. Package *psych* was used for the exploratory factor analysis and package *lavaan* for the path analyses.

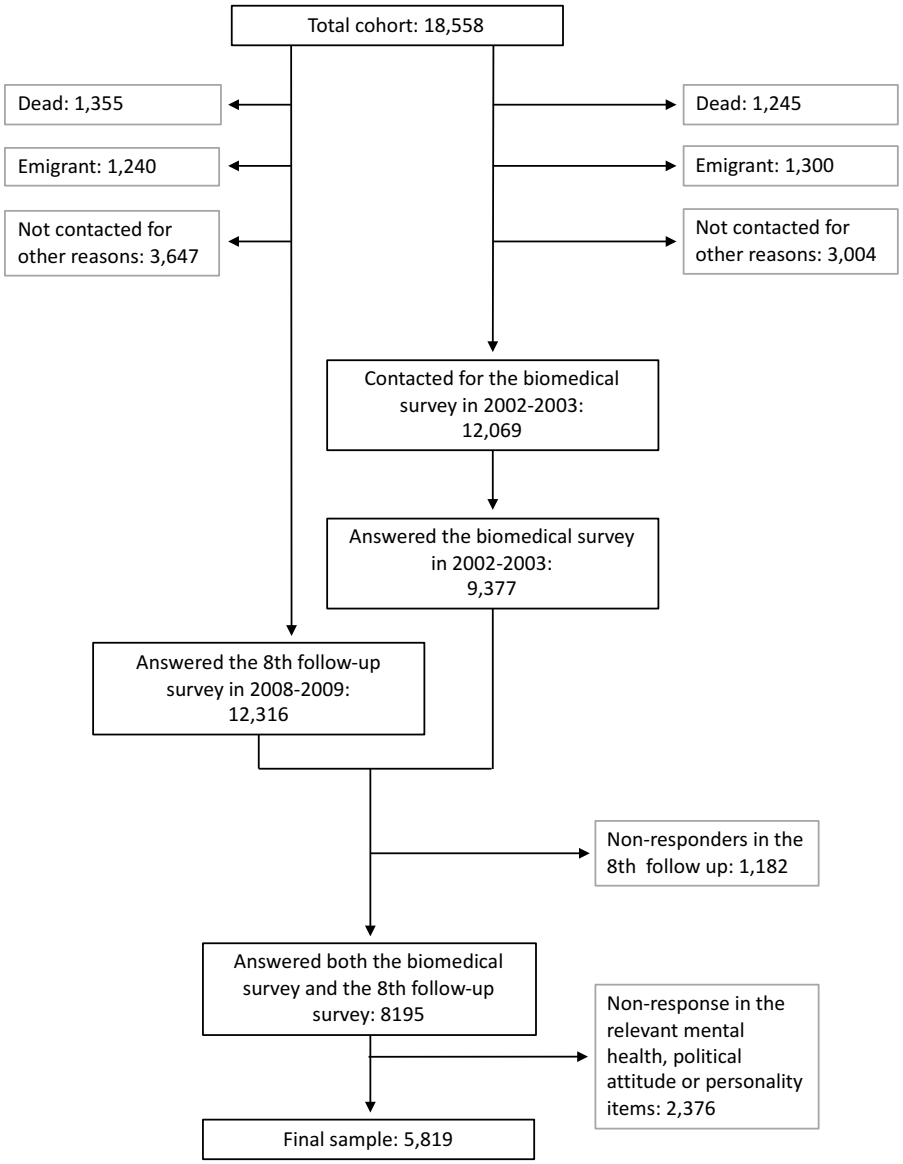

Figure 1. Selection of the final sample.

Table 1

Descriptive statistics of the final sample

Variable		*Range*	*M*	*SD*	*Number*	*%*
Sex						
	Male				2960	50.9
	Female				2859	49.1
Education		0–6	2.53	1.74		
Symptoms mean		0–4	0.13	0.32		
GAD		0–4	0.22	0.64		
Phobia		0–4	0.14	0.48		
Panic		0–4	0.02	0.23		
Inequality		1–5	3.42	0.80		
Trust in politics		1–5	3.18	0.86		
Racism		1–5	1.80	0.72		
Authority		1–5	3.86	0.84		
Environment		1–5	3.45	0.73		
Family values		1–5	2.15	0.56		
Work ethics		1–5	3.62	0.73		
Extroversion		10–50	29.53	6.59		
Agreeableness		10–50	36.81	5.26		
Conscientiousness		10–50	33.97	5.24		
Emotional stability		10–50	28.93	7.02		
Intellect		10–50	32.62	5.14		

Note. M=Mean, SD=Standard deviation

Table 2

Correlations between variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. Sex[1]																		
2. Education	0.05																	
3. Symptoms mean	0.10	0.02																
4. GAD	0.08	0.03	0.79															
5. Phobia	0.08	-0.01	0.65	0.14														
6. Panic	0.04	-0.02	0.23	0.15	0.17													
7. Inequality	-0.11	-0.30	0.04	0.03	0.04	0.01												
8. Trust in politics	-0.09	-0.31	0.00	0.00	0.01	0.00	0.48											
9. Racism	-0.09	-0.27	0.00	0.00	0.01	-0.02	0.17	0.20										
10. Authority	-0.15	-0.38	-0.01	-0.02	0.00	0.00	0.35	0.37	0.22									
11. Environment	0.05	0.13	0.06	0.05	0.04	0.00	0.01	-0.10	-0.19	-0.10								
12. Family values	-0.19	-0.01	-0.03	-0.02	-0.02	-0.02	0.03	0.04	0.02	0.16	0.00							
13. Work ethics	-0.03	-0.10	-0.01	-0.01	0.01	0.01	0.12	0.11	-0.05	0.23	-0.02	0.15						
14. Extroversion	0.08	0.09	0.00	0.01	-0.03	-0.02	-0.11	-0.11	-0.14	0.00	0.05	-0.01	-0.01					
15. Agreeableness	0.41	0.14	0.09	0.09	0.03	0.03	-0.14	-0.15	-0.29	-0.11	0.14	-0.05	0.03	0.37				
16. Conscientiousness	0.10	0.07	-0.04	-0.03	-0.04	0.01	-0.13	-0.08	-0.06	0.06	0.00	0.02	0.07	0.13	0.26			
17. Emotional stability	-0.13	0.09	-0.22	-0.20	-0.14	-0.07	-0.20	-0.11	-0.11	-0.06	-0.03	0.00	-0.01	0.20	0.06	0.18		
18. Intellect	-0.02	0.35	0.05	0.06	0.01	0.01	-0.14	-0.18	-0.26	-0.18	0.14	0.00	-0.05	0.39	0.34	0.22	0.09	

Note. Correlation coefficients ≥ |0.04| are significant at $p < 0.01$.

[1]1=Male, 2=female

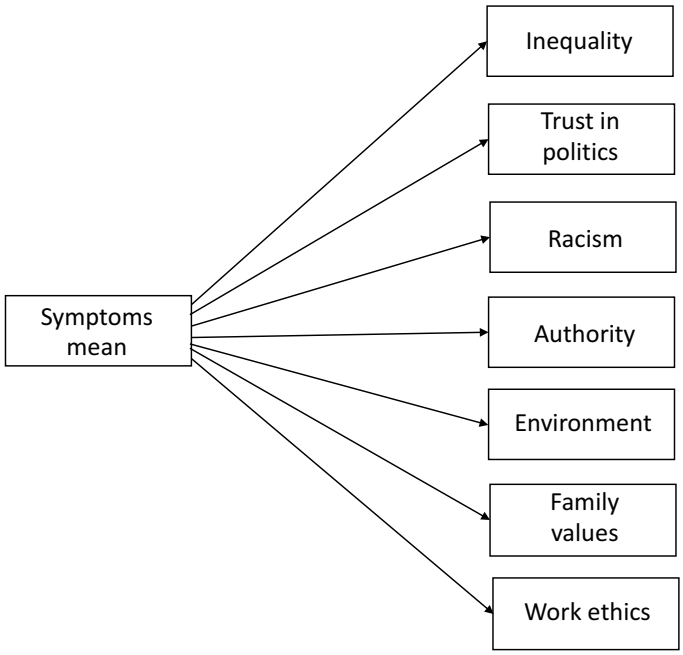

Figure 2. Model 1. Correlations between variables have been omitted from the figure.

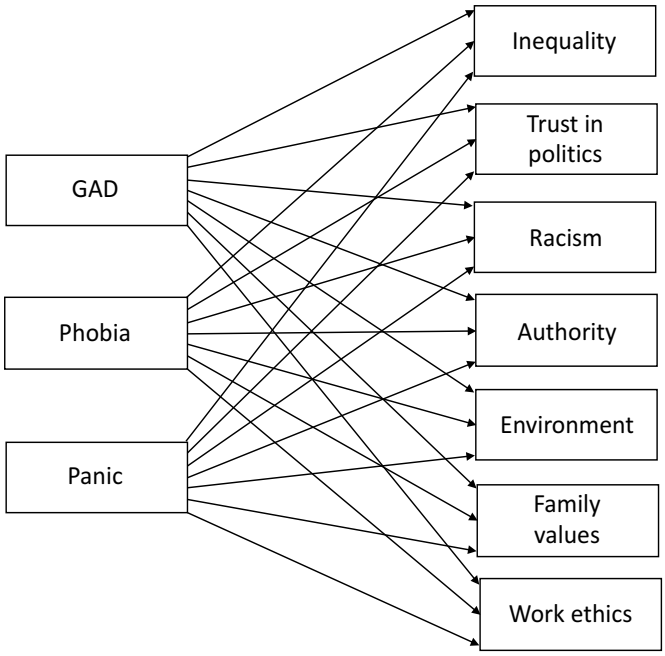

Figure 3. Model 2. Correlations between variables have been omitted from the figure.

3. Results

3.1. Attrition

Logistic regression was used to evaluate the relationship between non-response in the 8th follow-up survey and GAD, panic, phobia, and sex. The odds ratios and their 95 % confidence intervals are presented in Table 3.

When assessed separately, panic, phobia, GAD (*p*s < .001), and sex ($p < .01$) all predicted attrition statistically significantly. When controlling for other predictors, only sex was not a significant predictor of attrition. The odds ratios show that one-point increase in participant's anxiety, panic, or phobia score increased the risk of non-response in the 8th follow-up survey 1.2–1.4 -fold.

Table 3
Results of logistic regression predicting attrition

	Predictor	OR	95% CI	*p*
Model 1				
	Sex[1]	1.13	(1.04—1.23)	.004
	GAD	1.31	(1.23—1.38)	<.001
	Phobia	1.38	(1.28—1.49)	<.001
	Panic	1.69	(1.49—1.94)	<.001
Model 2				
	Sex[1]	1.08	(0.99—1.17)	.08
	GAD	1.20	(1.13—1.27)	<.001
	Phobia	1.23	(1.14—1.33)	<.001
	Panic	1.37	(1.20—1.59)	<.001

Note. Model 1 shows results for predictors when assessed separately. Model 2 shows the results for each predictor while controlling for the other predictor variables.
OR=Odds ratio, CI=confidence interval
[1]1=Male, 2=female

3.2. Exploratory factor analysis

The underlying structure of political attitudes was examined using exploratory factor analysis. Exploratory factor analysis was conducted for the 21 political attitude items using maximum likelihood extraction and oblimin rotation.

Bartlett's test of sphericity indicated that correlations between items were sufficiently large ($X^2(210) = 30378.65, p < .001$) and a visual inspection of the correlations supported this. Correlations between the attitude items are presented in Table 4. The Kaiser-Meyer-Olkin measure (KMO) verified the sampling adequacy for the analysis (KMO = .78) and KMO values for individual items were above .6, which is above the acceptable limit of .5.

Parallel analysis was conducted to evaluate the appropriate number of factors to retain. Parallel analysis suggested 7 factors and the examination of the scree plot also defended the retainment of 7 factors. Table 5 shows the factor loadings after rotation. Together, the seven factors explained 47.15 % of the total variance and the communalities ranged between .07 and .75. Factor 1 was interpreted to capture attitudes concerning economic inequality, factor 2 trust in politics, factor 3 racism, factor 4 attitudes concerning authority, factor 5 protecting the environment, factor 6 family values, and factor 7 work ethics. The solution is similar to the ones obtained in previous studies (e.g. Cheng et al., 2012).

One item's ("All women should have the right to choose abortion") loadings were under the recommended threshold on all factors. This item was therefore excluded in the subsequent analyses. One item ("Politicians are in politics for self, not community benefit") had loadings of similar magnitude on two factors, inequality and trust in politics. This item was treated as part of the "trust in politics" factor in the subsequent analyses, as the difference between the two loadings was fairly small and the solution seemed to be a better fit to the interpretation of the factors.

Table 4

Correlations between attitude items

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Ordinary working people do not get their fair share of the nation's wealth																					
There is one law for the rich and one for the poor	-0.19																				
Management will always try to get the better of employees if it gets the chance	0.05	-0.02																			
Politicians are mainly in politics for their own benefit and not for the benefit of the community	0.15	-0.19	-0.17																		
None of the political parties would do anything to benefit me	0.00	-0.03	0.16	-0.09																	
It does not really make much difference which political party is in power in Britain	0.26	-0.16	0.21	0.11	0.18																
I would not mind working with people from other races	0.29	-0.02	0.06	0.04	0.04	0.31															
I would not want a person from another race to be my boss	0.01	0.03	0.31	-0.11	0.06	0.12	0.05														
I would not mind if a family from another race moved in next door to me	-0.12	0.50	0.02	-0.19	0.04	-0.10	0.07	-0.01													
People who break the law should be given stiffer sentences	0.15	-0.06	0.23	0.05	0.15	0.46	0.19	0.11	0.03												
School should teach children to obey authority	0.04	-0.08	0.10	0.10	0.37	0.10	0.04	-0.02	0.00	0.16											
For some crimes the death penalty is the most appropriate sentence	0.02	-0.06	-0.07	0.15	0.11	-0.02	-0.05	-0.07	-0.06	-0.06	0.16										
Problems in the environment are not as serious as people claim	0.18	-0.22	-0.05	0.67	-0.05	0.13	0.06	-0.10	-0.17	0.07	0.14	0.18									
We should tackle problems in the environment even if this means slower economic growth	0.45	-0.21	0.09	0.16	0.02	0.27	0.28	0.01	-0.11	0.20	0.08	-0.03	0.21								
Preserving the environment is more important than any other political issue today	0.34	-0.08	0.04	0.10	-0.02	0.22	0.50	0.02	0.00	0.15	0.01	-0.05	0.14	0.49							
Marriage is for life	0.11	-0.05	0.31	0.01	0.10	0.16	0.13	0.37	-0.04	0.17	0.16	0.00	0.06	0.15	0.16						
Couples who have children should not separate	0.30	-0.11	0.01	0.16	-0.01	0.22	0.36	0.02	-0.05	0.16	0.09	0.00	0.19	0.33	0.44	0.17					
All women should have the right to choose to have an abortion if they wish	0.16	-0.20	-0.03	0.58	-0.04	0.18	0.03	-0.06	-0.20	0.11	0.10	0.15	0.61	0.15	0.08	0.03	0.15				
Having almost any job is better than being unemployed	0.28	-0.18	0.18	0.18	0.05	0.55	0.22	0.10	-0.12	0.39	0.08	-0.07	0.20	0.32	0.26	0.12	0.24	0.22			
If I didn't like a job I'd pack it in, even if there was no other job to go to	0.60	-0.17	0.08	0.10	0.02	0.25	0.24	0.03	-0.08	0.16	0.02	0.00	0.10	0.42	0.30	0.12	0.27	0.10	0.29		
Once you've got a job it's important to hang on to it even if you don't really like it	0.10	0.32	0.02	-0.02	0.00	0.00	0.11	-0.05	0.41	0.04	0.06	-0.02	-0.01	0.02	0.08	0.03	0.11	-0.04	0.00	0.14	

Note. Correlation coefficients ≥ |0.04| are significant at $p < 0.01$.

Table 5

Factor analysis of political attitude items

Item	Loadings							h^2
	F1	F2	F3	F4	F5	F6	F7	
Ordinary working people do not get their fair share of the nation's wealth	**0.54**	0.01	0.05	0.15	0.10	0.01	-0.00	0.36
There is one law for the rich and one for the poor	**0.88**	-0.02	0.01	-0.02	-0.01	-0.02	0.01	0.75
Management will always try to get the better of employees if it gets the chance	**0.44**	0.10	-0.10	0.05	0.02	0.04	0.04	0.32
Politicians are mainly in politics for their own benefit and not for the benefit of the community	**0.37**	**0.33**	-0.06	0.06	-0.11	0.04	0.01	0.45
None of the political parties would do anything to benefit me	0.07	**0.73**	-0.02	0.01	-0.02	-0.00	-0.01	0.60
It does not really make much difference which political party is in power in Britain	-0.04	**0.81**	0.03	0.02	0.02	-0.01	0.01	0.63
I would not mind working with people from other races	0.01	0.00	**0.82**	0.01	-0.01	0.02	0.02	0.67
I would not want a person from another race to be my boss	0.04	-0.01	**-0.79**	-0.02	0.00	0.04	0.02	0.64
I would not mind if a family from another race moved in next door to me	0.05	0.01	**0.69**	-0.10	0.03	0.02	-0.01	0.50
People who break the law should be given stiffer sentences	0.02	-0.01	0.01	**0.80**	-0.02	0.01	-0.01	0.65
School should teach children to obey authority	-0.01	-0.03	-0.01	**0.54**	0.07	0.10	0.07	0.33
For some crimes the death penalty is the most appropriate sentence	0.04	0.08	-0.11	**0.62**	-0.04	-0.06	-0.00	0.49
Problems in the environment are not as serious as people claim	0.04	0.13	-0.03	0.03	**-0.61**	0.10	-0.03	0.44
We should tackle problems in the environment even if this means slower economic growth	0.03	-0.05	0.03	0.00	**0.75**	0.03	-0.03	0.59
Preserving the environment is more important than any other political issue today	0.00	0.20	-0.06	-0.01	**0.63**	0.03	0.00	0.40
Marriage is for life	-0.04	-0.03	0.14	0.10	-0.02	**0.55**	0.00	0.34
Couples who have children should not separate	-0.00	-0.01	-0.07	-0.03	0.00	**0.72**	0.01	0.53
All women should have the right to choose to have an abortion if they wish	0.05	-0.02	0.11	0.10	0.04	-0.23	0.04	0.07
Having almost any job is better than being unemployed	-0.09	0.02	0.10	0.18	0.02	0.06	**0.43**	0.27
If I didn't like a job I'd pack it in, even if there was no other job to go to	0.07	0.04	-0.04	-0.03	0.02	0.12	**-0.61**	0.37
Once you've got a job it's important to hang on to it even if you don't really like it	0.09	0.03	-0.05	-0.05	-0.00	0.08	**0.68**	0.51
Eigenvalues	1.57	1.51	1.90	1.53	1.37	0.95	1.07	
% of variance	7.48	7.19	9.06	7.27	6.54	4.54	5.07	
α	0.73	0.75	0.81	0.69	0.68	0.47	0.60	

Note. Loadings ≥ |0.30| are in bold.

3.3. Path analysis

In order to evaluate if GAD, phobia, and panic predict political attitudes, two models were tested using path analysis. In model 1 the mean anxiety disorder symptom score was regressed on attitude summary scores reflecting previously extracted seven attitude factors. In model 2 GAD, panic, and phobia symptom scores were regressed on the seven attitude summary scores.

Sex, level of education, and personality were controlled for by partialling out their effects on the attitude and anxiety variables. This was done by first conducting linear regressions with variables to be controlled for as predictors and variables of interest as predicted variables. The resulting residuals were used as the variables in the path analyses. Both, models 1 and 2 were first controlled for sex only, and then for sex, level of education, and personality.

The predictors were transformed in order to illustrate the effect size of the difference between clinical and non-clinical participants. First a clinical cut-off of two points out of four was used to divide participants in two categories: those who had scored two or more points were considered to exhibit clinical levels of overall anxiety disorder symptoms, GAD, phobia, or panic. For each of the predictors a mean score was calculated separately for clinical and non-clinical participants. Then the predictor variables were divided by the difference between these two obtained means. The resulting coefficients reflect the predicted difference in political attitudes between clinical and non-clinical levels of anxiety disorder symptoms.

The models were fitted using maximum likelihood estimation. Results can be seen from Tables 6 and 7. As all the models were saturated, the fit indices were not informative. Nonetheless, the specific paths between variables can be assessed even though the fit of the model to the data cannot be (Tabachnick & Fidell, 2014). Over all, anxiety disorder symptoms were a significant predictor of only economic inequality and environmental attitudes. In model 1 the mean symptom score predicted attitudes concerning inequality ($B = 0.39$, $p < .001$) and the environment ($B = 0.24$, $p < .001$) when adjusted for sex. These effects remained significant when adjusted for sex, level of education, and personality, although the estimates for both economic inequality ($B = 0.16$, $p = .02$) and environmental attitudes ($B = 0.15$, $p = .02$) were lower. In model 2 GAD predicted attitudes concerning economic inequality ($B = 0.11$, $p = .005$) and the environment ($B = 0.14$, $p < .001$), and phobia predicted attitudes concerning

economic inequality (B = 0.23, $p < .001$) when adjusted for sex. Panic was not a significant predictor of any of the attitudes. When adjusted for sex, level of education, and personality, GAD remained a significant predictor of environmental attitudes (B = 0.09, $p = .02$) and phobia a significant predictor of attitudes concerning economic inequality (B = 0.14, $p = .003$). Once again, panic did not predict any of the attitudes.

Table 6
Results of path analyses for model 1: mean anxiety disorder symptoms predicting attitudes

	Partially adjusted		Fully adjusted	
	B	95% CI	*B*	95% CI
Inequality	**0.39**	(0.24, 0.53)	**0.16**	(0.02, 0.29)
Trust in politics	0.14	(-0.01, 0.30)	0.06	(-0.08, 0.21)
Racism	0.11	(-0.02, 0.24)	0.08	(-0.04, 0.20)
Authority	0.04	(-0.11, 0.19)	0.00	(-0.13, 0.14)
Environment	**0.24**	(0.11, 0.38)	**0.15**	(0.03, 0.28)
Family values	-0.07	(-0.17, 0.03)	-0.09	(-0.19, 0.01)
Work ethics	-0.02	(-0.15, 0.11)	-0.03	(-0.16, 0.10)

Note. Statistically significant coefficients (p<.05) are in bold.

Table 7

Results of path analyses for model 2: GAD, phobia, and panic symptoms predicting attitudes

	Partially adjusted		Fully adjusted	
	B	95% CI	*B*	95% CI
GAD				
Inequality	**0.11**	(0.03, 0.20)	0.03	(-0.04, 0.11)
Trust in politics	0.03	(-0.06, 0.11)	0.02	(-0.06, 0.10)
Racism	0.04	(-0.03, 0.12)	0.06	(-0.01, 0.13)
Authority	-0.02	(-0.10, 0.07)	-0.00	(-0.08, 0.07)
Environment	**0.14**	(0.07, 0.22)	**0.09**	(0.01, 0.16)
Family values	-0.01	(-0.07, 0.05)	-0.02	(-0.08, 0.03)
Work ethics	-0.03	(-0.11, 0.04)	-0.03	(-0.10, 0.04)
Phobia				
Inequality	**0.23**	(0.13, 0.33)	**0.14**	(0.05, 0.23)
Disappointment in politics	0.10	(-0.01, 0.21)	0.05	(-0.05, 0.15)
Racism	0.08	(-0.01, 0.17)	0.05	(-0.03, 0.13)
Authority	0.03	(-0.07, 0.14)	0.01	(-0.08, 0.10)
Environment	0.08	(-0.01, 0.17)	0.06	(-0.03, 0.15)
Family values	-0.03	(-0.10, 0.04)	-0.03	(-0.10, 0.04)
Work ethics	-0.00	(-0.09, 0.09)	-0.00	(-0.09, 0.09)
Panic				
Inequality	-0.03	(-0.26, 0.19)	-0.09	(-0.30, 0.12)
Disappointment in politics	0.01	(-0.23, 0.26)	-0.07	(-0.30, 0.16)
Racism	-0.12	(-0.32, 0.09)	-0.18	(-0.37, 0.01)
Authority	0.11	(-0.13, 0.35)	-0.01	(-0.22, 0.20)
Environment	-0.14	(-0.35, 0.07)	-0.10	(-0.31, 0.10)
Family values	-0.08	(-0.24, 0.08)	-0.09	(-0.25, 0.07)
Work ethics	0.10	(-0.11, 0.31)	0.06	(-0.15, 0.26)

Note. Statistically significant coefficients (p<.05) are in bold.

4. Discussion

This study examined the relationship between fear and anxiety and political attitudes in a British cohort. Fear and anxiety were measured as GAD, phobia, and panic disorder symptoms experienced during the past week at the age of 44, and political attitudes in seven issue domains were measured six years later. Anxiety symptoms did not predict most of the political attitudes measured in this study. Overall anxiety symptoms across the three different disorders predicted only attitudes towards economic inequality and preservation of the environment. Those who had experienced more frequent and severe symptoms of GAD, panic disorder, and phobia were more concerned about the economic inequality and environmental issues. More specifically, GAD symptoms predicted attitudes towards the environment and symptoms of phobia predicted attitudes concerning economic inequality while panic disorder symptoms were unrelated to attitudes in all issue domains. The predicted difference between clinical and non-clinical participants was 0.09–0.16 points on an attitude scale ranging from 1 to 5 when the effects of possible confounding factors were controlled for. Even though these effects can be considered relatively modest, the results do pose interesting questions concerning the theories of political attitudes' underpinnings.

The findings of this study are contradictory to previous findings in the literature of the basis of political ideology and attitudes. Many theories have argued that one underlying factor of conservative attitudes is conservatives' heightened sensitivity to threat and fear compared to liberals (e.g. Altemeyer, 2006; Duckitt, 2001; Jost et al., 2003). Previous studies have found a conservative shift in people's attitudes in real-life situations following threatening events (e.g. Bonanno & Jost, 2006; Echebarria-Echabe & Fernández-Guede, 2006; Nail & McGregor, 2009), linked perceived threat to more conservative attitudes (e.g. Davis & Silver, 2004; Golec de Zavala et al., 2010; Huddy et al., 2005; Renfro et al., 2006; Thórisdóttir & Jost, 2011; Verkuyten, 2009) and found that conservatives' reactivity to threatening stimuli differs from that of liberals' (e.g. Carraro et al., 2011; Dodd et al., 2012; Oxley et al., 2008; Vigil, 2010). If heightened sensitivity to threat and fear would lead one to endorse more conservative political views, it could be assumed that this effect would be evident in those who are extremely fearful and sensitive to threat – to the extent that it can be considered to be clinical. However, symptoms of anxiety disorders did not predict more conservative views in any of the attitude domains inspected here.

If anything, the present findings reveal an effect quite the opposite of what could be assumed based on the existing literature. The anxiety disorder symptoms, GAD and phobia more specifically, did predict increased concern over economic inequality and preservation of the environment. These attitudes are considered to be liberal rather than conservative views. As mentioned before, liberal or leftist political views express more concern about inequality and just distribution of income than conservative and rightist views. Some previous studies have even used these particular items in this study pertaining to economic inequality as a measure of leftist political views (Cheng et al., 2012; Evans et al., 1996; Paterson, 2008). Several studies have also found that environmental concern is more common in liberals than conservatives (e.g. Carlsson et al., 2012; Dunlap, Xiao, & McCright, 2001; Mccright & Dunlap, 2011; Poortinga, Spence, Whitmarsh, Capstick, & Pidgeon, 2011; Ziegler, 2017). Interestingly, both environmental issues and economic inequality might reflect the economic dimension of political ideology: environmental issues are often framed in a way that highlights that the actions that need to be taken are done at the expense of economic growth and by means of economic regulation (e.g. "We should tackle problems in the environment even if this means slower economic growth"). Economic attitudes have also been found to predict concern over the environment (Longo & Baker, 2014). Therefore the present findings can be interpreted as to indicate that fear and threat are linked to the economic dimension of political ideology more broadly. However, as only two of the attitudes measured here were more or less explicitly linked to economic attitudes, more research is needed before any definite conclusions can be drawn.

Based on previous findings, the fact that GAD symptoms did not predict more conservative attitudes in this study might not be that surprising. GAD seems to reflect trait anxiety, as opposed to phobias which in turn can be thought to be a manifestation of trait fear. A few studies previous to this have concluded that anxiety might not have a similar effect on political attitudes as fear does (Huddy et al., 2005; Ray & Najman, 1987). Although the present findings support this view, it is notable that these previous studies did not find anxiety to be associated with political attitudes at all, while here GAD did predict increased concern over environmental issues. This might be due to the fact that previous studies have quite often measured political ideology as a one-dimensional construct or measured only a few political attitudes and have not included environmental issues among them.

Previous studies have found that fear is associated with more conservative views, or at least attitudes relating to out-groups, if not political attitudes or ideology more generally (e.g. Nail & McGregor,

2009). However, similar results were not obtained in this study, as phobia did not predict more conservative attitudes in general, nor racism more specifically. This seems especially surprising in the light of the study by Hatemi et al. (2013) which, similarly to the present study, examined phobic fear's and social phobia's connection to political attitudes. In the study by Hatemi et al. (2013) those who reported more phobic fear identified as more conservative, and more specifically, those with social phobia held more conservative attitudes towards out-groups. The discrepancy between the previous and present findings might be explained by differences in the measurements of fear and phobia. In the study by Hatemi et al. (2013), the relationship between social phobia and out-group attitudes was far stronger than relationship between phobic fear and political ideology in general. In fact, only those with extreme levels phobic fear were notably more conservative. The measures used here did not differentiate between social phobia and other phobias, although social phobia was included in the measure of phobias. It is therefore possible that I was unable to detect the effect of phobia on racist attitudes since there were very few participants who had severe phobic symptoms and perhaps even fewer with social phobia specifically. The levels of racist attitudes were also quite low in the present sample, which might have further affected the results.

Panic disorder symptoms were not associated with any of the attitudes in this study. There are a few possible explanations for this. As opposed to GAD and phobias, for which there is somewhat consistent evidence that they represent anxiety and fear respectively, it is less clear where panic disorder falls in this categorization (Hettema et al., 2005; Kendler et al., 2003; Vaidyanathan et al., 2009). It is therefore possible that panic disorder is in some pivotal way different from GAD and phobias, perhaps in that it reflects both fear and anxiety or neither. A more probable explanation is however that panic disorder symptoms were markedly less common than GAD and phobia symptoms in this sample. There were so few participants with high levels of panic symptoms that possible connections with political attitudes would most likely have remained unnoticed.

In addition to GAD and phobias not predicting more conservative but rather liberal attitudes, these symptoms predicted different attitudes in this study. Even though the effects were fairly small in magnitude, and should therefore be interpreted with caution, it is nonetheless interesting to speculate what might cause this difference. Looking into the difference between the emotions the two disorders reflect might shed some light on why these disorders seem to be associated with different attitudes. As covered earlier, fear is the response to imminent or clear threat whereas anxiety is the response to

uncertain and more ambiguous threat. It is intuitively compelling to say that this distinction fits well if we look at the difference between the two predicted attitudes. Economic inequality is a threat that could be argued to be more present in person's everyday life, and its effects are more readily seen and experienced. Environmental risks, such as global warming, on the other hand, are more distant, uncertain, and their effects are often not similarly evident. This interpretation must however be taken with a grain of salt as many other explanations are possible as well.

It is also entirely possible that fear and anxiety increase concern over societal issues in general, irrespective of political ideology. Other factors might then influence which issues become important to the individual and the content of these concerns. Political attitudes are highly susceptible to cultural differences as well as changes within a culture. As times change some political issues become more central while others' relevance diminishes. This might influence how the underlying individual differences affect the views people endorse. It is possible that at the time preserving the environment and economic inequality were simply more salient issues for the participants than the other included in this study. If fear and anxiety were to influence political ideology more generally, it would be expected that they would influence a broad range of issues in a consistent manner. The results of this study do not support this notion, as fear and anxiety were related very specifically to only a few of the political attitudes studied here.

4.1. Limitations and differences with previous studies

As the findings of the present study differ notably from previous findings, it is useful to take a more detailed look at other possible reasons for this discrepancy. The limitations of the present study and notable differences between this and previous studies might affect the results as well as what can be inferred from them.

The most pressing limitation is perhaps the amount of anxiety disorder symptoms which was quite low in the present sample. As discussed before, this was also true for racist attitudes, which might explain why no association between fear or anxiety and racism emerged, even though this would be expected based on previous studies. The sample was also limited to a specific cohort in Great Britain which might constrain the generalizability of the results to this cultural context and period of time. Seeing as most of the previous studies have been conducted in the US, the failure to obtain similar results to

previous studies might be explained simply by differences between these two cultures. Then again it can be argued that both Great Britain and the US are relatively similar democratic western countries with relatively similar political environments. Explaining the discrepancy between the present results and previous ones by cultural differences alone would also call for a clarification of the theories of threat sensitivity and political orientation, and the universality of their claims.

There are also notable differences in the measures of threat and political orientation between the present study and the majority of the previous ones. Previous measures of threat have included worldviews (Perry et al., 2013), perceived threat of e.g. terrorist attacks or immigrants (e.g. Davis & Silver, 2004; Golec de Zavala et al., 2010; Huddy et al., 2005), and real-life events such as terrorist attacks (e.g. Bonanno & Jost, 2006; Echebarria-Echabe & Fernández-Guede, 2006; Van de Vyver et al., 2016), as well as induced thoughts of death, terrorist attacks, or societal threat (e.g. Gailliot et al., 2006; Landau et al., 2004). Many of these assess something that could be argued to be a political view in itself (e.g. perceived threat of immigrants or terrorist attacks) or very closely related to political views (e.g. worldviews). Anxiety disorder symptoms, on the other hand, are free from political content. Even though some studies have used measures of threat sensitivity that are similarly non-political (e.g. reactivity to aversive or threatening stimuli; Dodd et al., 2012; Oxley et al., 2008), the possibility still remains that there are some crucial differences between these and anxiety disorder symptoms, and that they do not tap into the same constructs. Many of the studies have also measured political ideology, rather than individual attitudes, and have often done so by asking participants to place themselves on a one-dimensional liberal-conservative continuum. It is possible that this approach measures how people *identify* more than what kind of policy preferences they hold and that identification has different underlying mechanisms than attitudes. The studies that have measured individual attitudes have mostly included questions about military action and spending, immigration, or prejudice towards certain groups of people such as Muslims (e.g. Golec de Zavala et al., 2010; Nail & McGregor, 2009; Van de Vyver et al., 2016). Although racist attitudes were included in this study, the questions were phrased in a way that makes them perhaps reflect personal preferences rather than opinions about policies or societal norms (see Table 5 for the exact phrasing), which might have affected the results.

4.2. Conclusions and future directions

The findings of the present study indicate that the relationship between threat sensitivity and political orientation might not be quite as straightforward as some previous studies would suggest, and that more research is needed to fully unravel how fear and anxiety predict political attitudes.

Contrary to what has been suggested, fear and anxiety might not be underlying traits of conservatism specifically. Rather, both fear and anxiety seem to predict more liberal attitudes in at least some domains of political issues. Moreover, fear and anxiety do not seem to relate to a wider range of political attitudes in a consistent manner. This would suggest that fear and anxiety are not related to political ideology more broadly thus predicting political attitudes. Instead, they seem to be linked to only some specific attitudes, but not others. More specifically, fear in this sample predicted increased concern over economic inequality while anxiety predicted increased concern over preserving the environment. Although it is possible that both attitudes concerning economic inequality and environmental attitudes reflect the economic dimension of political ideology, more research would be needed in order to argue that fear and anxiety predict economic attitudes more broadly.

These findings illustrate the need for more nuanced measures of both political orientation and threat sensitivity. Future studies should move away from using a single self-identification question as a measure of political ideology to examining instead how the assumed underpinnings of political orientation affect different political attitudes in wide variety of issue domains. It might also be fruitful to further clarify what exactly different measures of threat and threat sensitivity are capturing. Distinctions between threats that are closely related to political issues and non-political threats, threat sensitivity as a trait and state threat, as well as fear and anxiety are not trivial as it is possible that different kinds of threat have different effects on political attitudes. Based on the present study, fear and anxiety seem to relate differently to political attitudes, but more evidence is needed to establish these findings.

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